

MANUFACTURE OF TITANIA CONTAINING INORGANIC/ORGANIC HYBRID BIOACTIVE MATERIAL

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Abstract

PROBLEM TO BE SOLVED: To obtain a material with excellent bioactivity usable for a bone substitutional material, by adding a hydrolytic titanium compound to an aqueous solution containing an organoalkoxysilane and end silanol type dialkylsiloxane, mixing them, and then adding a calcium salt to it and mixing and heating it.

SOLUTION: The bioactive material manufactured by adding a hydrolytic titanium compound to an aqueous solution containing an organoalkoxysilane $\text{SiR}'n(\text{OR})4-n$ and end silanol type dialkylsiloxane $(\text{HO}(\text{Si}(\text{R})2\text{O})n)\text{H}$ and mixing and then adding a calcium salt of inorganic acid and mixing and heating, is used as a bone substitutional material or bone reparative material. Tetraethoxysilane is preferably used as organoalkoxysilane $\text{SiR}'n(\text{OR})4-n$ and end silanol type polydimethylsiloxane preferably used as end silanol type dialkylsiloxane. Tetraisopropyltitanate is suitable as the titanium compound.

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